

## CLAIMS

### What is claimed is:

1. A method comprising:  
  
reading at least one bit of a device address, wherein the device address is coupled with a serial data word and the serial data word is transmitted across a first link of a first serial data transmission path to a first device having an address;  
  
and  
  
passing the serial data word across a second link of the first serial data transmission path to a second device if the at least one bit of the device address does not match at least one corresponding address bit of the first device.
2. The method of claim 1, further comprising:  
  
reading the serial data word if the device address of the serial data word matches an address of a device.
3. The method of claim 1, further comprising:  
  
performing error checking if the device address of the serial data word matches an address of a device.
4. The method of claim 3, wherein the performing error checking is performed by the device.
5. The method of claim 1, further comprising:

notifying a data transmission path controller if the performing determines an error condition associated with the serial data word wherein the notifying occurs on a second serial data transmission path.

6. The method of claim 5, wherein a first link of the second serial data transmission path is selected from the group consisting of a metallic conductor, an optical fiber, a wireless link, and an energy transmission medium.

7. The method of claim 5, wherein a second link of the second serial data transmission path is selected from the group consisting of a metallic conductor, an optical fiber, a wireless link, and an energy transmission medium.

8. The method of claim 1, wherein the first link of the first serial data transmission path is selected from the group consisting of a metallic conductor, an optical fiber, a wireless link, and an energy transmission medium.

9. The method of claim 1, wherein the second link of the first serial data transmission path is selected from the group consisting of a metallic conductor, an optical fiber, a wireless link, and an energy transmission medium.

10. The method of claim 1, wherein the serial data word is in packet format.

11. The method of claim 1, wherein the serial data word has a structure comprising:

- an address field; and
- a data field.

12. The method of claim 1, wherein the serial data word has a structure comprising:

- at least two address bits;
- a type indicator bit;
- an eight bit end point number;
- an eight bit data field; and
- a parity bit.

13. The method of claim 1, wherein the first device is selected from the group consisting of a communications front end, a data storage unit, a wireless device, a local area network, a cellular telephone, and an entry point.

14. A computer readable medium containing executable computer program instructions, which when executed by a data processing system, cause the data processing system to perform a method comprising:

- reading at least one bit of a device address, wherein the device address is coupled with a serial data word and the serial data word is transmitted across a

first link of a first serial data transmission path to a first device having an address;  
and

passing the serial data word across a second link of the first serial data transmission path to a second device if the at least one bit of the device address does not match at least one corresponding address bit of the first device.

15. The computer readable medium as set forth in claim 14, wherein the method further comprises:

reading the serial data word if the device address of the serial data word matches an address of a device.

16. The computer readable medium as set forth in claim 14, wherein the method further comprises:

performing error checking if the device address of the serial data word matches an address of a device.

17. The computer readable medium as set forth in claim 14, wherein the performing error checking is performed by the device.

18. The computer readable medium as set forth in claim 14, wherein the method further comprises:

notifying a data transmission path controller if the performing determines an error condition associated with the serial data word wherein the notifying occurs on a second serial data transmission path.

19. A computer readable medium containing executable computer program instructions, which when executed by a data processing system, cause the data processing system to perform a method comprising:

transmitting a serial data word across a first link of a first serial data transmission path to a first device having an address, the serial data word having a device address comprised of at least one bit;

reading the at least one bit of the device address by the first device; and

passing the serial data word across a second link of the first serial data transmission path to a second device if the at least one bit of the device address does not match at least one corresponding address bit of the first device.

20. The computer readable medium as set forth in claim 19, wherein the method further comprises:

reading the serial data word if the device address of the serial data word matches an address of a device.

21. The computer readable medium as set forth in claim 19, wherein the method further comprises:

performing error checking if the device address of the serial data word matches an address of a device.

22. The method of claim 21, wherein the performing error checking is performed by the device.

23. The method of claim 19, further comprising:

notifying a data transmission path controller if the performing determines an error condition associated with the serial data word wherein the notifying occurs on a second serial data transmission path.

24. An apparatus comprising:

a first device coupled with a first serial data transmission path, the first serial data transmission path having a first link and a second link, wherein the first device to read at least one bit of a device address coupled with a serial data word, to be transmitted across the first link of the first serial data transmission path and the first device to pass the serial data word across the second link of the first serial data transmission path to a second device if the at least one bit of the device address does not match at least one corresponding address bit of the first device.

25. The apparatus of claim 24, wherein the first device to read the serial data word if the device address of the serial data word matches an address of the first device.

26. The apparatus of claim 24, wherein the first device to perform error checking if the device address of the serial data word matches an address of the first device.

27. The apparatus of claim 26, wherein error checking to be performed by the device.

28. The apparatus of claim 24, wherein a data transmission path controller to be notified if an error condition associated with the serial data word is found, wherein the data transmission path controller to be notified on a second serial data transmission path.

29. The apparatus of claim 28, wherein a first link of the second serial data transmission path is selected from the group consisting of a metallic conductor, an optical fiber, a wireless link, and an energy transmission medium.

30. The apparatus of claim 28, wherein a second link of the second serial data transmission path is selected from the group consisting of a metallic conductor, an optical fiber, a wireless link, and an energy transmission medium.

31. The apparatus of claim 24, the first link of the first serial data transmission path is selected from the group consisting of a metallic conductor, an optical fiber, a wireless link, and an energy transmission medium.

32. The apparatus of claim 24, wherein the second link of the first serial data transmission path is selected from the group consisting of a metallic conductor, an optical fiber, a wireless link, and an energy transmission medium.

33. The apparatus of claim 24, wherein the serial data word is in packet format.

34. The apparatus of claim 24, wherein the serial data word has a structure comprising:

- an address field; and
- a data field.

35. The apparatus of claim 24, wherein the serial data word has a structure comprising:

- at least two address bits;
- a type indicator bit following the at least two address bits;
- an eight bit end point number following the type indicator bit;
- an eight bit data field following the eight bit end point number; and



a parity bit following the eight bit data field.

36. The apparatus of claim 24, wherein the first device is selected from the group consisting of a communications front end, data storage unit, a wireless device, a local area network, a cellular telephone, and an entry point.

37. An apparatus comprising:

a first serial data transmission path having a first link and a second link;

a controller to transmit a serial data word across the first serial data transmission path, the serial data word having a device address comprised of at least one bit;

a first device having an address, wherein the first device is coupled with the first serial data transmission path; and

a second device coupled with the first serial data transmission path, wherein the first device to read the at least one bit of the device address of the serial data word and if the at least one bit of the device address of the serial data word does not match a portion of the address of the first device then the first device to pass the serial data word across the second link of the first serial data transmission path to the second device.

38. The apparatus of claim 37, wherein the first device to read the serial data word if the device address of the serial data word matches the address of the first device.

39. The apparatus of claim 37, further comprising:

a device to perform error checking if the device address of the serial data word matches an address of the device.

40. The apparatus of claim 37, wherein the controller to be notified if an error condition associated with the serial data word is found, wherein the controller to be notified on a second serial data transmission path.

2025-03-20 10:34:00